



**REPLACEMENT SHEET**  
Inventor(s): Klaus Huber et al.  
U.S. Serial No.: 09/485,596  
Filing Date: October 16, 2000  
Atty. Dkt. No.: 2345/113  
Sheet 1/8

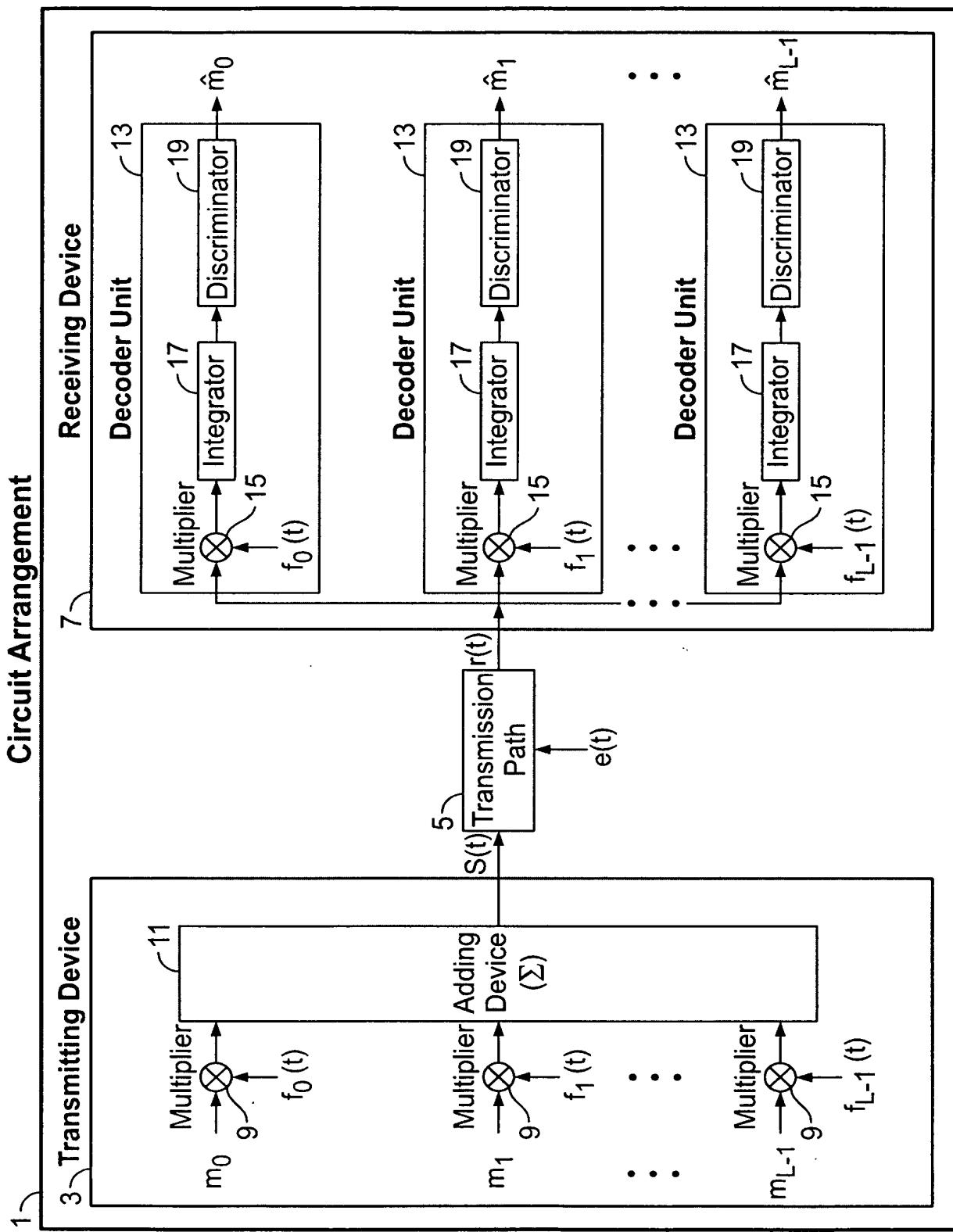
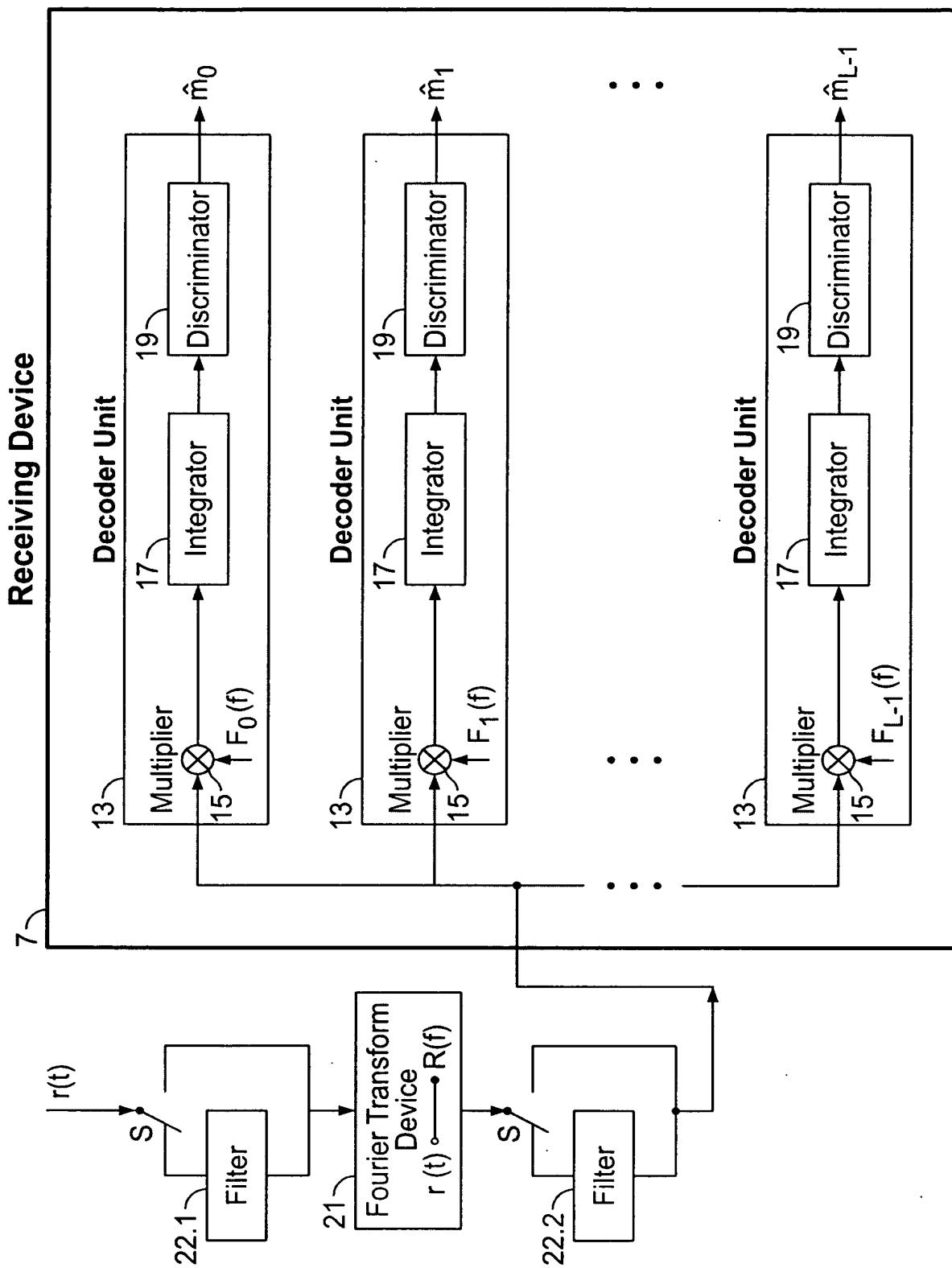
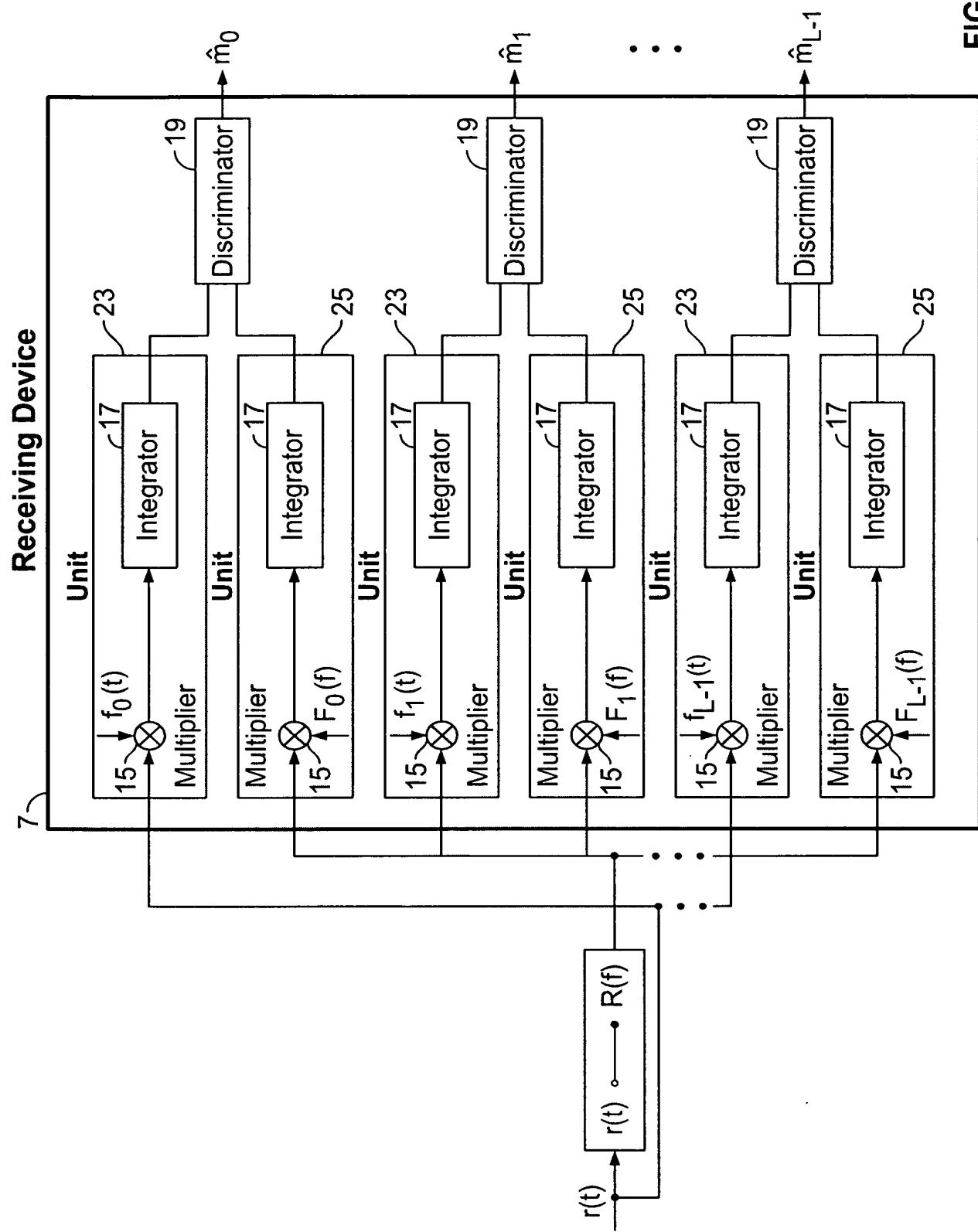


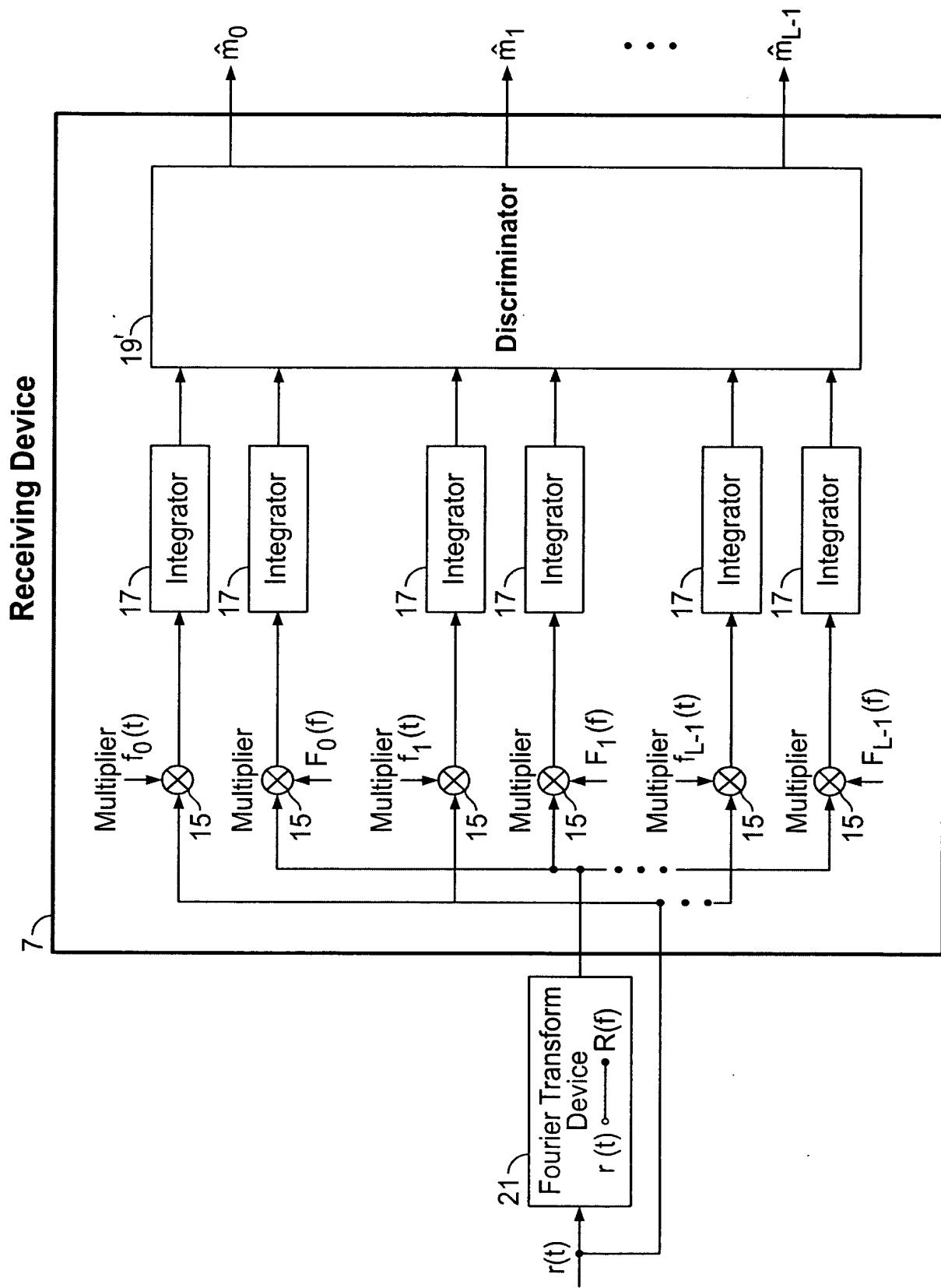
FIG. 1



**FIG. 2**



**FIG. 3**



**FIG. 4**

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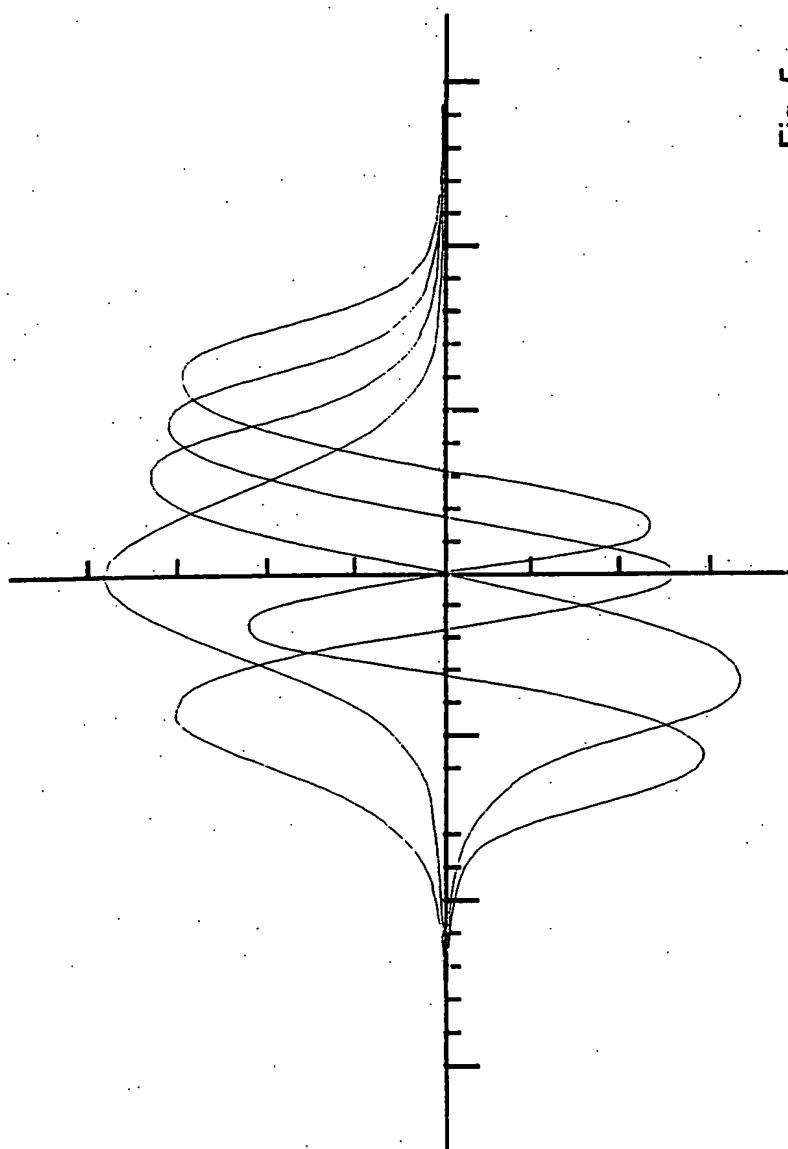
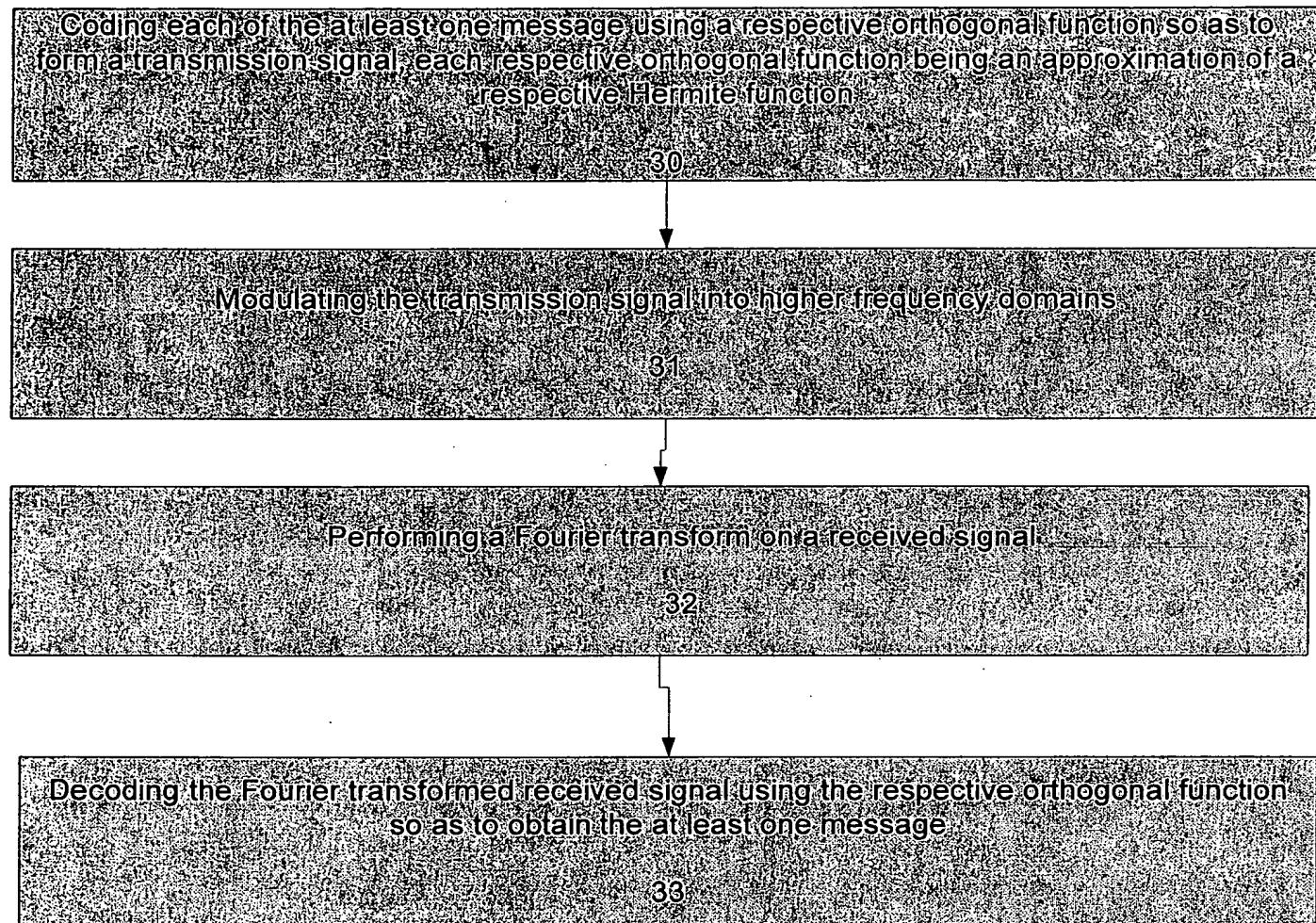


Fig. 5



**FIG. 6**

Coding, using a coding device at a transmission side, each of the at least one message using a respective orthogonal function so as to form a transmission signal, each respective orthogonal function being an approximation of a respective Hermite function

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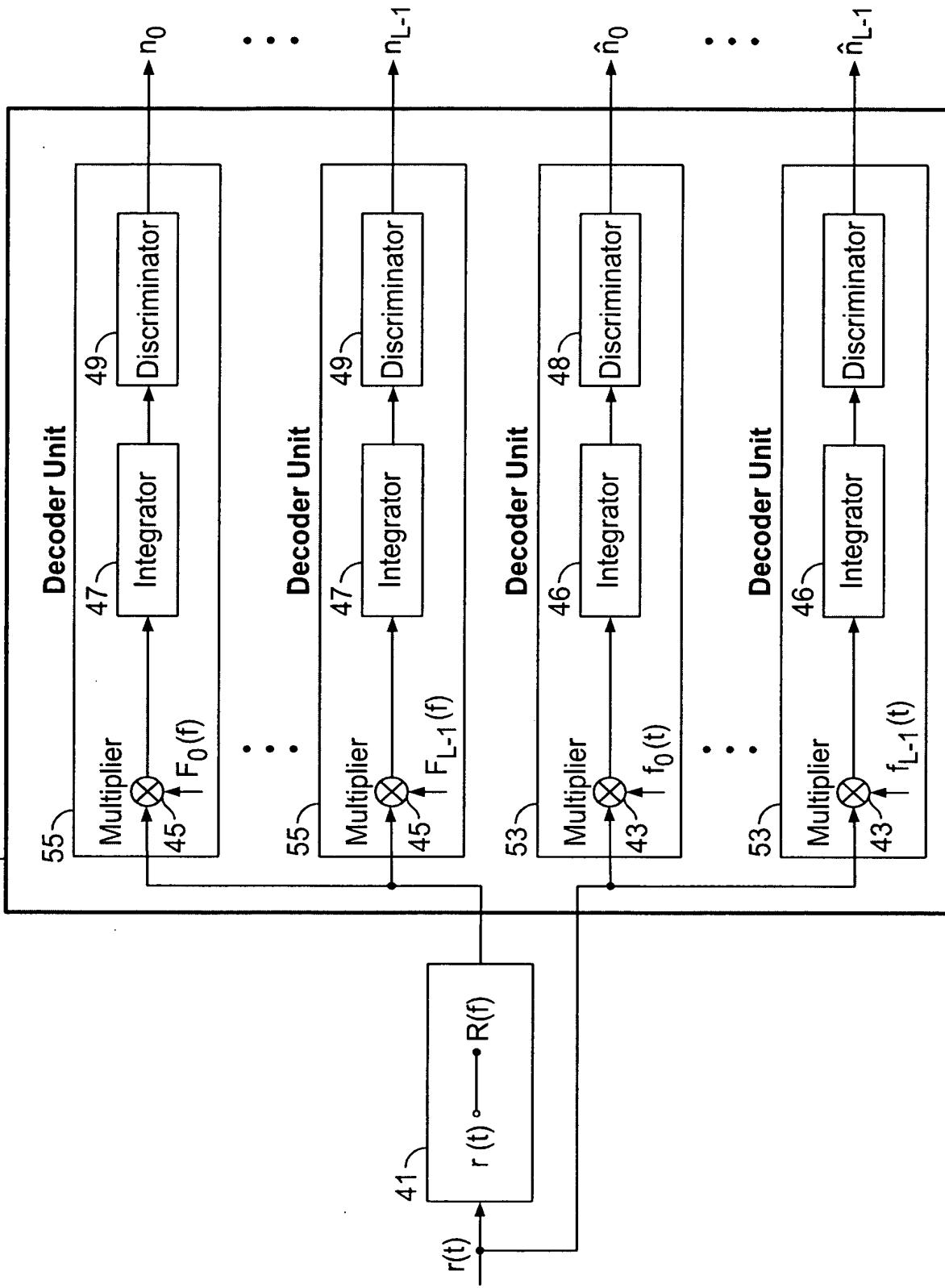


Recovering, using a demodulation device at a receiving side, the at least one message from a received signal via a decoding using the respective Hermite function, the demodulation device including a Fourier-transform device for performing a Fourier transform on the received signal before the decoding, and including a respective first decoder unit corresponding to each of the at least one message, each respective first decoder unit including a respective first multiplier, a respective first integrator and a respective first discriminator connected in series, wherein each respective first decoder unit is for decoding the received signal in a time domain and wherein the demodulation device further includes a respective second decoder unit associated with each respective first decoder unit, each respective second decoder unit being for decoding the received signal in a frequency domain and including a respective second multiplier, a respective second integrator and a respective second discriminator connected in series

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**FIG. 7**

40 → Device



**FIG. 8**